Dave Marlow

EDUC 538

Winter, 2011

**Learning Model Comparative Article**

**Instructional Strategies: Discovery Learning and Problem-Based Learning**

|  |  |  |
| --- | --- | --- |
|  | Discovery Learning  http://www.hb.edu/uploaded/Institute_for_21st_Century_Education/ECinstitute.jpg | Problem-Based Learning  [http://t1.gstatic.com/images?q=tbn:CyDxHQ2oqB1eiM:http://www.thecasefiles.org/2005Images/Global/CFWebLearningCycle250.jpg](http://www.google.com/imgres?imgurl=http://www.thecasefiles.org/2005Images/Global/CFWebLearningCycle250.jpg&imgrefurl=http://www.thecasefiles.org/PBCS-Overview.htm&usg=__6pd3PP1pcj0KRCcUbD0EA_Gf4A8=&h=256&w=250&sz=49&hl=en&start=8&um=1&itbs=1&tbnid=CyDxHQ2oqB1eiM:&tbnh=111&tbnw=108&prev=/images?q=problem+based+learning&um=1&hl=en&rlz=1W1ADFA_en&tbs=isch:1) |
| Relative “student-centeredness” | Very student centered. Students work individually or more commonly in groups to investigate and explore. Teacher acts as a facilitator and answers student questions with questions. | Very student centered. Problems are current and authentic so students are actively engaged. Encourages creative thinking. Teacher acts as coach through learning cycle. |
| Assessment | Formative assessment during discovery. If learning space is utilized peer assessment could occur through blog posts and responses and by editing wiki spaces. Assessed summativelly using tests, quizzes and or projects. | Assessed formatively throughout the process in various manners. Summative assessment is often in form of a presentation of proposal. |
| Ease of use | Relatively easy to plan and implement. One day or multilple day lessons could be used. Often many materials/manipulatives are needed | Difficult to plan and pace. Need to establish clear expectations. Learning occurs in chucks. Each lesson would be several days. Students that are out sick could stay caught up if an online learning space is utilized. |
| Considerations | When students are absent they can fall far behind. If the students are not motivated by the idea of discovery, this can be a negative strategy for them. Having an online learning space can facilitate students at different levels and will also motivate some students with the incorporation of technology. | When students are absent they can fall far behind. Unmotivated students can really get buried in the process and possibly have nothing to show for multiple days of work. |

Discovery learning and Poblem-based learning have many things in common. Both strategies aim at making the learning meaningful or relevant for students. Research also suggests that these strategies promote authentic learning and students can recall the information for longer periods of time. A problem with both of these strategies is that they require a high level of student buy in or engagement. The reason this can be considered a problem is that not all students are highly motivated. When unmotivated students are required to learn using one of these learning strategies there can be very minimal results. Some students just what to be taught how to do things. Using either of these instructional models in a computer based learning space would promote student engagement. The authenticity cannot really exist without the presents of technology because todays students learn online. Both discovery learning and problem-based learning models require student collaboration and communication. To accommodate communication in a learning space blogs and or wikispaces could be used. Either of these models would serve as a good structure for the online learning space that we will develop for this class.

In terms of mathematics instruction using an online learning space, discovery learning is a more efficient model than problem-based learning. Given that students need to meet dozens of specific state standards in any given course, more structure is needed in lesson design than is preferred in the problem-based model. Both of these strategies take a lot of planning and preparation. I think this especially true with problem-based learning. Having big “problems” that require students to navigate through smaller problems while meeting state standards is a very difficult task. Highly motivated students that are already working above their grade level would be good candidates for this model. If a teacher uses a discovery learning approach to instruction, there can be daily lesson plans that are focused on different state standards. If a student is absent for several days, they could use the learning space tools such as student posts to the blog to get caught back up to speed.

References:

University of Colorado at Denver (2009). Instructional Design Models. Retrieved June

23, 2009, from <http://carbon.cudenver.edu/~mryder/itc_data/idmodels.html>.

[www.thecasefiles.org/**PBCS**-**Overview**.htm](http://www.thecasefiles.org/PBCS-Overview.htm)

<http://carbon.cudenver.edu/~bwilsonelab.html>

<http://web.cortland.edu/friendaidIDtheories15.html>